

REMARKS

II. Response to Office Action

A. Status of the Pending Application

Claims 1-11 and 13-18 are pending in the application. Claim 12 has been cancelled. Claims 9-11 and 18 are rejected under 35 U.S.C. § 112. Claims 1-3, 5-7 and 16-17 are rejected under 35 U.S.C. § 103(a) as unpatentable over Henry et al (U.S. Patent No. 4,940,901) in view of Turnbull et al (U.S. Patent No. 5,122,666). Claims 4 and 14-15 are rejected under 35 U.S.C. 103(a) as unpatentable over Henry et al and Turnbull et al further in view of Harootian et al (U.S. Patent No. 6,252,231). Claim 8 is rejected under 35 U.S.C. 103(a) as unpatentable over Harootian et al in view of Turnbull et al. Claim 13 is rejected under 35 U.S.C. 103(a) as unpatentable over Henry et al and Turnbull et al and further in view of Tran et al. (U.S. Patent No. 5,545,899).

B. Claim Objections

Claim 9 has been amended to specify that the auxiliary substrate is not separated "between the individual semiconductor boards and individual semiconductor components." No new matter has been added by the amendment. The Examiner is respectfully requested to remove the objections to claims 9-11 and 18 and examine claims 9-11 and 18.

C. Claim Rejections

1. Claims 1-3, 5-7 and 16-17

Claims 1-3, 5-7 and 16-17 are not anticipated under 35 U.S.C. § 103(a) by the Henry-Turnbull combination. Claim 1 recites, for example and without limitation, a sensor arrangement for detecting radiation having a layer sequence which contains, in the order indicated: a holding substrates which is permeable to the detectable radiation, at least in regions, or produces the detectable radiation when radiation impinges thereon and which holds a plurality of detection elements in the sensor arrangement, at least one auxiliary layers which is permeable to the detectable radiation and extends continuously over a set of the plurality of detection elements or which contains separate

regions which are respectively associated with a detection element, a detection layers with separate detection regions which are contained in a detection element and respectively contain at least one semiconductor component which is sensitive to the detectable radiation, and an insulating layer with separate insulating regions for electrically insulating the detection regions from a point of contact having electrically conductive connections and pads fitted on a free side, the pads being electrically connected to connecting points which are routed to the semiconductor components. The Examiner asserts that the Henry-Turnbull combination discloses all the recitations of claim 1. Applicant respectfully disagrees.

Henry et al is directed to an x-ray imaging device where a scintillating layer is deposited on a substrate before forming photosensitive elements (Henry et al, Abstract). The Examiner asserts that Henry discloses "at least one auxiliary layers which is permeable to the detectable radiation and extends continuously over a set of the plurality of detection elements or which contains separate regions which are respectively associated with a detection element" and "an insulating layer with separate insulating regions for electrically insulating the detection regions from a point of contact having electrically conductive connections and pads fitted on a free side, the pads being electrically connected to connecting points which are routed to the semiconductor components." However, the auxiliary layer that the Examiner points to layer 50 in Fig. 3 of Henry et al, is not permeable to radiation, and does not extend continuously over a set of the plurality of detection elements. Henry et al. discloses that the layer 50 is a reflecting layer that functions to reflect photons back into the scintillating layer 32 to increase the efficiency of the device (Henry et al, Col. 5, ll. 61-63). Therefore, by its very definition, the reflecting layer 50 is not permeable to radiation. In addition, the layer 50 does not extend over a set of the detection elements. Henry et al. teaches that the layer 50 is deposited under the scintillating layer 32 which is disposed beneath the detection elements (PIN photodiodes) *Id.*

The insulating layer that the Examiner asserts also does not electrically insulate the detection regions from a point of contact having electrically conductive connections and pads fitted on a free side. The layer 34 that the Examiner asserts is an insulating

layer separates the scintillating layer 32 from a conductor layer 36, and does not electrically the detection regions from a point of contact, as recited in claim 1.

Turnbull et al. likewise does not supply the recitations that are deficient in Henry et al., and therefore Turnbull et al., whether alone or in combination with Henry et al., does not anticipate claim 1.

Claims 2-3, 5-7 and 16 ultimately depend from claim 1 and are patentable for at least the reasons discussed above. Therefore, because Henry et al. and Turnbull et al. do not disclose all of the recitations of claims 1-3, 5-7 and 16, the Henry-Turnbull combination fails to anticipate claims 1-3, 5-7 and 16, and accordingly, Applicant requests the Examiner to remove the rejection of claims 1-3, 5-7 and 16.

2. Claims 4 and 14-15

Claims 4 and 14-15 are not anticipated by the Henry-Turnbull-Harootian combination. Claims 4 and 14-15 depend from claim 1. Harootian et al. does not disclose or suggest the limitations of claim 1 that are deficient in claim 1 above. Harootian et al is directed to an x-ray absorbing, light reflective medium for an x-ray detector array, where a highly dense, light reflective, x-ray absorbing medium is disposed between x-ray scintillating crystals (See Harootian et al., Abstract).

Harootian et al. does not disclose or suggest at least one auxiliary layers which is permeable to the detectable radiation and extends continuously over a set of the plurality of detection elements or which contains separate regions which are respectively associated with a detection element. Therefore, because the Henry-Turnbull-Harootian combination does not disclose or suggest all of the recitations of claim 1, the Henry-Turnbull-Harootian combination does not anticipate claim 1 or dependent claims 4 and 14-15. Accordingly, Applicant respectfully requests the Examiner to remove the rejections of claims 4 and 14-15.

3. Claim 8

Claim 8 is not anticipated by the Harootian-Turnbull combination. Claim 8 recites, for example and without limitation, a computer tomograph comprising: a radiation transmission unit for emitting radiation; a detection unit for detecting the emitted radiation following passage of the emitted radiation through a tissue which influences a radiation intensity; and an evaluation unit which receives output signals

from the detection unit as the basis for producing image data for an image of a structure of the tissue, wherein the detection unit contains a sensor arrangement, the sensor arrangement comprising in the order indicated: a holding substrate which is permeable to the emitted radiation, at least in regions, or produces detectable radiation when the emitted radiation impinges thereon and which holds a plurality of detection elements in the sensor arrangement, at least one auxiliary layer which is permeable to the emitted or detectable radiation and extends continuously over a set of the plurality of detection elements or which contains separate regions which are respectively associated with a detection element, a detection layer with separate detection regions which are contained in a detection element and respectively contain at least one semiconductor component which is sensitive to the emitted or detectable radiation, and an insulating layer with separate insulating regions for electrically insulating the detection regions from a point of contact having electrically conductive connections and pads fitted on a free side, the pads being electrically connected to connecting points which are routed to the semiconductor components. The Examiner alleges that the Harootian-Turnbull combination discloses all of the recitations of claim 8. Applicant respectfully disagrees.

Harootian et al. does not disclose or suggest all of the recitations of claim 8. The Examiner alleges that Harootian et al discloses an "auxiliary layer which is permeable to the emitted or detectable radiation and extends continuously over a set of the plurality of detection elements" by referring to the scintillating crystals 12 in Harootian et al. (See Office Action mailed November 20, 2006 at 7; Harootian et al, Fig. 3). However, the scintillating crystals of Harootian are not an auxiliary layer that extend over a set of the plurality of detection elements. The scintillating layer 12 is not permeable to the emitted or detected radiation, and does not appear to extend continuously over a set of the plurality of detection elements. Rather, the scintillating layer 12 in Harootian et al. appears to be composed of discrete crystals disposed over the detection elements.

As discussed above for claim 1, Turnbull et al. also does not disclose "auxiliary layer which is permeable to the emitted or detectable radiation and extends continuously over a set of the plurality of detection elements." Therefore, because the Harootian-Turnbull combination does not disclose all of the recitations of claim 8, the

Harootian-Turnbull combination cannot anticipate claim 8. Accordingly, Applicant respectfully requests the Examiner to remove the rejection of claim 8.

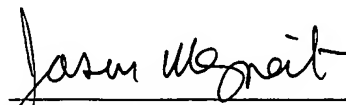
4. Claim 13

Claim 13 is not anticipated by the Henry-Turnbull-Tran combination. Claim 13 depends from claim 1 and recites, *inter alia*, that the holding substrate contains at least one of a highly absorbent semiconductor material, CdZnTe, PbO, and GaO sulfide. Tran et al. is directed to a solid state radiation detection panel with an array of photosensitive detectors arranged in rows and columns (See Tran et al., Abstract). Tran et al. does not supply the recitations of claim 1 that are deficient in Henry and Turnbull. Tran et al. does not disclose or suggest an "auxiliary layer which is permeable to the emitted or detectable radiation and extends continuously over a set of the plurality of detection elements." Because Tran et al., whether alone or in combination with Henry and Turnbull, does not disclose all of the recitations of claim 1, the Henry-Turnbull-Tran combination cannot anticipate claim 13. Accordingly, Applicant respectfully requests the Examiner to remove the rejection of claim 13.

D. SUMMARY

Pending Claims 1-11 and 13-18 are patentable. Applicant respectfully requests the Examiner grant early allowance of this application. The Examiner is invited to contact the undersigned attorney for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,



Jason M. Wejnert
Registration No. 55,722
Attorney for Applicants

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200